

УДК 656.025.4:339.543

IMPROVEMENT OF CUSTOMS CARGO OPERATIONS ON UKRAINE'S STATE BORDER

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Summary: The article considers the improvement of customs cargo operations on Ukraine's state border. Shown a model of the process of customs cargo processing.

Key words: custom cargo operations, process.

Анотація: У статті розглядаються удосконалення митних обробок вантажу на українському державному кордону. Показано модель процесу митної обробки вантажу.

Ключові слова: митна обробка, процес.

Аннотация: В статье рассматривается усовершенствование таможенных обработок груза на украинской государственной границе. Показано модель процесса таможенной грузовой обработки.

Ключевые слова: таможенные обработки груза, процесс.

The European integration of Ukraine has set to solve a number of current tasks for the State Customs Service of Ukraine. One of them is to improve quality and accelerate the process of cargo handling at the state border checkpoints. Customs policy must ensure the implementation of economic, social, financial, trade and political intentions of the state.

Last years the principles of logistics have frequently been applied to deliver cargo in international traffic. An important role is played by the effective interaction of all the parts of logistics chains which include the process of customs processing of goods [1, p. 128].

The comparative analysis of the flows of cargo, vehicles and peoples through the check point Uzhgorod is made. At present in Ukraine there are three international check points on the Ukrainian border with Hungary. They are Chop, Vilok, Solovka check points. As of 2008-2010, the largest amount of cargo transported via the international checkpoints of Ukraine falls on the shoulders of Chop and Vilok checkpoints. Within the mentioned period 10,835,000 tons were transported in both directions. Comparison of the results of 2008-2010 indicates that the amount of imported cargo is growing by 23% [2, p. 60].

The research object is the process of customs cargo processing, and the subject is the impact of hourly customs cargo processing parameters on the overall delivery time of cargo in international traffic.

The paper objective is to build a model of the process of customs cargo processing, which allows making technological, design and management decisions, changing the input parameters, carrying out long-term planning based on information about the employment of customs checkpoints, customs teams and types of customs regimes. It gives an opportunity to analyze the time of carrying out customs procedures in different types of customs regimes. To create the model,

the Petri nets theory is used. It allows investigating processes taking into account the probability of failures and queues.

Time for customs check depends on appropriate types of checks: environmental, phytosanitary, radiological and veterinary. If a process of the customs processing of goods is presented as a model of "grey box", it will have the following external influence factors: checkpoint efficiency(P_{np}); quantity of lines(n_{cm}); availability of equipment to control and communication on the check points (In) to receive timely information about the theft of car, drugs smuggling or weapons smuggling, the number of employees of the customs post in a shift (Npp). Input parameters are the volume and type of cargo (Qv), the type of customs regime (RCI), type of vehicle (A) and frequency of vehicles approach (Ntz). The output is the time of carrying out customs procedures for different types of customs regimes (Tmp). Internal elements of the system are: the process of dispatching the car to the shipper, the process of loading, access to the internal customs, the process of drawing up documents for internal customs, entrance to the customs checkpoint, the process of customs control and clearance, access to the customs office of destination, delivery of cargo to the consignee.

The condition for efficient customs processing of goods is to minimize the time spent on the customs processing of goods:

$$T_{\text{мп}} = \sum_{i=1}^m T_{\text{.mni}} \rightarrow \min$$

(1)

where $T_{\text{.mni}}$ - time for customs processing of goods in the i-th phase, h;
 m - number of phases.

To develop the model of the customs processing of cargo it is expedient to apply the system of information parallel processing and the objects which work in parallel. The processes can be modeled using Petri nets. Petri nets are a mathematical tool that can be used in any industry for any system where possible graphical representation of the object in the form of schemes and where needed means of representation of parallel processes are needed [3, p. 120]. The total model of Petri nets which describes the process of customs cargo processing, is shown in fig.2. A system of parallel operations of customs clearance and customs control is considered in details.

the phases of the customs processing which take the largest amount of time will be studied.

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